

CLAIMS

1. Probe for measuring a magnetic field comprising at least one magnetoresistive or magnetoinductive sensor which is sensitive to the magnetic field along a selected measurement axis, characterised in that it comprises at least two magnetoresistive or magnetoinductive sensors (14, 16) which are rigidly connected to each other in a position such that their selected measurement axes are parallel and offset relative to each other in a transverse direction relative to their selected measurement axes, and in that the probe comprises output terminals which are specific to each magnetoresistive or magnetoinductive sensor in order to provide a signal which is representative of the magnetic field measured by each sensor along the selected measurement axis thereof.
2. Measurement probe according to claim 1, characterised in that it comprises at least two pairs of magnetoresistive or magnetoinductive sensors (602, 604, 606, 608, 610, 612), the sensors of each same pair having their selected measurement axes parallel and offset relative to each other in a transverse direction relative to their selected measurement axes and the selected measurement axes of the sensors of two separate pairs are angularly offset.
3. Measurement probe according to claim 2, characterised in that it comprises at least nine magnetoresistive or magnetoinductive sensors (1002A, 1002B, 1002C, 1004A, 1004B, 1004C, 1006A, 1006B, 1006C) which are distributed in three triplets of three sensors, the three sensors of the same triplet having their selected measurement axes parallel and offset relative to each other in transverse directions

relative to their selected measurement axes and the selected measurement axes of the sensors of separate triplets are angularly offset.

4. Measurement probe according to claim 3, characterised in that all the magnetoresistive or magnetoinductive sensors (602, 604, 606, 608; 1206, 1208) of the probe are distributed in accordance with two layers (1202, 1204).

5. Measurement probe according to claim 4, characterised in that the selected measurement axes of the sensors of different layers are angularly offset.

6. Measurement probe according to claim 5, characterised in that the sensors (1206, 1208) of the same layer have their selected measurement axes parallel.

7. Measurement probe according to any one of claims 1 to 6, characterised in that all the magnetoresistive or magnetoinductive sensors (1304, 1306) of the probe are distributed on the same layer.

8. Device for analysing an electrical circuit during operation, comprising at least one probe (12) according to any one of the preceding claims, a processing chain (20, 22) which is specific to each magnetoresistive or magnetoinductive sensor (14, 16) and means (24, 26) for processing the signals from the various processing chains, which processing means are suitable for evaluating the ratio of the difference between the field values measured by two magnetoresistive or magnetoinductive sensors having selected measurement axes which are parallel and which are offset transversely relative to each other at the distance

separating the two magnetoresistive or magnetoinductive sensors.

9. Device according to claim 8, characterised in that it comprises means (26) for displaying the ratio of the difference between the field values measured by two magnetoresistive or magnetoinductive sensors (14, 16) having selected measurement axes which are parallel and which are offset transversely at the distance separating the two magnetoresistive or magnetoinductive sensors, and in that the device is suitable for being held by hand and manually displaced.

10. Device according to claim 8, provided with a sensor according to claim 2, wherein the processing means are capable of evaluating, for each pair of sensors (602, 604, 606, 608), the ratio of the difference between the field values measured by two magnetoresistive or magnetoinductive sensors having selected measurement axes which are parallel and which are offset transversely to the distance separating the two magnetoresistive or magnetoinductive sensors and the processing means are capable of calculating at least one component of the current from the difference between the evaluated ratios.

11. Device according to claim 10, characterised in that it comprises means (26) for displaying at least one calculated component of the current, and in that the device is suitable for being held by hand and manually displaced.